Amendments to The Claims

The following listing of claims replaces all prior versions and listings of the claims in this application.

Listing of the Claims

1-193. (Cancelled)

194. (Currently amended) A method of producing a heteromeric taste receptor that responds to sweet taste stimuli comprising:

expressing at least one T1R2 nucleic acid sequence and at least one T1R3 nucleic acid sequence in a recombinant host cell under conditions which result in a heteromeric taste receptor comprising at least one T1R2 and T1R3 polypeptide that ~~binds to and/or is activated by~~ responds to sweet taste stimuli, wherein said T1R2 is a T1R2 polypeptide and is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 10, (ii) encoded by a nucleic acid sequence comprising a nucleic acid that hybridizes to SEQ. ID. NO: 10 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS, or (iii) a T1R2 polypeptide possessing at least 90% sequence identity to the T1R2 polypeptide of SEQ. ID. NO: 6;

and wherein said T1R3 is a T1R3 polypeptide and is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 9 or SEQ. ID. NO: 11; (ii) encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 or SEQ. ID. NO: 11 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, 10% SDS; and washing at 65°C in a solution comprising 0.2X SCC and 0.1% SDS, or (iii) a T1R3 polypeptide possessing at least 90% sequence identity to the T1R3 polypeptide of SEQ. ID. NO: 4 or SEQ. ID. NO: 7.

195. (Previously presented) The method of claim 194, wherein said T1R2 polypeptide is selected from the group consisting rat T1R2, mouse T1R2 and human T1R2 and said T1R3 is selected from the group consisting of rat T1R3, mouse T1R3 and human T1R3.

196. (Previously presented) The method of claim 195, wherein said T1R2 and T1R3 are of the same species origin.

197. (Previously presented) The method of claim 195, wherein said T1R2 and T1R3 are of different species origin.

198. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide ~~having~~ comprising the amino acid sequence ~~contained in~~ of SEQ. ID. No: 6.

199. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 90% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 6.

200. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 95% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 6.

201. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 96% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 6.

202. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 97% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 6.

203. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 98% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 6.

204. (Currently amended) The method of claim 194, wherein said T1R2 is a human T1R2 polypeptide that exhibits at least 99% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 6.

205. (Currently amended) The method of claim 194, wherein said T1R2 is encoded by the nucleic acid sequence ~~contained in~~ of SEQ. ID. NO: 10.

206. (Currently amended) The method of claim 194, wherein said T1R2 is encoded by a nucleic acid sequence that ~~hybridizes under stringent hybridization conditions to the nucleic acid sequence contained in SEQ. ID. NO: 10~~ hybridizes to SEQ. ID. NO: 10 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

207. (Canceled) ~~The method of claim 194 which said T1R2 polypeptide is a fragment of the polypeptide encoded by SEQ ID NO: 10 that when expressed in association with a T1R3 polypeptide yields a T1R2/T1R3 taste receptor that binds and/or is activated by sweet taste stimuli.~~

208. (Canceled) ~~The method of claim 194, wherein said T1R2 comprises a fragment of the human T1R2 polypeptide contained in SEQ. ID. NO: 6 that when expressed in association with a T1R3 polypeptide results in a heteromeric T1R2/T1R3 taste receptor that binds and/or is activated by sweet taste stimuli.~~

209. (Currently amended) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide ~~having~~ comprising the amino acid sequence ~~contained in~~ of SEQ. ID. NO: 7.

210. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 90% ~~Sequence~~ sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

211. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 95% ~~Sequence~~ sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

212. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 96% ~~Sequence~~ sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

213. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 97% ~~Sequence~~ sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

214. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 98% ~~Sequence~~ sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

215. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 99% ~~Sequence~~ sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

216. (Currently amended) The method of claim 194, wherein said T1R3 is a rat T1R3 polypeptide ~~having~~ comprising the sequence ~~contained in~~ of SEQ. ID. NO: 4.

217. (Currently amended) The method of claim 194, wherein the T1R3 polypeptide is encoded by a nucleic acid sequence ~~contained in~~ of SEQ. ID. NO: 9 or SEQ. ID. NO: 11.

218. (Currently amended) The method of claim 194, wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that ~~hybridizes to the nucleic acid sequence contained in SEQ. ID. NO: 9 under stringent hybridization conditions~~ hybridizes to SEQ. ID. NO: 9 or SEQ. ID. NO: 11 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS ~~or a fragment thereof that encodes a T1R3 polypeptide which when expressed in association with a T1R2 polypeptide yields a heteromeric taste receptor that responds to sweet taste stimuli~~.

219. (Previously presented) The method of claim 194, wherein said T1R2 and said T1R3 nucleic acid sequences are each operably linked to a constitutive promoter.

220. (Previously presented) The method of claim 194, wherein, said T1R2 and said T1R3 nucleic acid sequences are each operably linked to an inducible promoter.

221. (Previously presented) The method of claim 194, wherein said T1R2 and T1R3 nucleic acid sequences are expressed in a prokaryotic cell.

222. (Previously presented) The method of claim 194, wherein said T1R2 and T1R3 nucleic acid sequences are expressed in a eukaryotic cell.

223. (Currently amended) The method of claim ~~221~~ 222, wherein said cell is a mammalian, yeast, insect or amphibian cell.

224. (Currently amended) The method of claim ~~221~~ 222, wherein said cell is a HEK-293 cell, COS cell, CHO cell, or Xenopus ooctye.

225. (Previously presented) The method of claim 224, wherein the cell is a HEK-293 cell.

226. (Previously presented) The method of claim 194, wherein said cell expresses a G protein.

227. (Previously presented) The method of claim 226, wherein said G protein is a promiscuous G protein.

228. (Previously presented) The method of claim 226, wherein said G protein is $G_{\alpha 15}$, $G_{\alpha 16}$ or gustducin.

229. (Previously presented) The method of claim 194, wherein said T1R2 and T1R3 polypeptides are expressed on the surface of said cell.

230. (Currently amended) The method of claim 194, wherein either of said T1R2 and T1R3 nucleic acid sequences are ~~attached to~~ contained in a nucleic acid construct that comprises a nucleic acid sequence that encodes a detectable label.

231. (Previously presented) The method of claims 194, wherein said cell stably expresses said T1R2 and T1R3 nucleic acid sequences.

232. (Previously presented) The method of claim 194, wherein said cell transiently expresses said T1R2 and T1R3 nucleic acid sequences.

233. (Currently amended) The method of claim 194, wherein said cell stably or transiently expresses a T1R2 sequence ~~having~~ comprising the amino acid sequence ~~contained in~~ of SEQ ID NO: 6 and a T1R3 sequence ~~having~~ comprising the amino acid sequence ~~contained in~~ of SEQ. ID. NO: 4 or SEQ ID NO: 7.

234. (Previously presented) The method of claim 232 wherein said cell is further expresses $G_{\alpha 15}$, $G_{\alpha 16}$ or gustducin.

235. (Previously presented) The method of claim 233 wherein said cell is a HEK-293 cell.

236. (New) A method of producing a heteromeric taste receptor that responds to sweet taste stimuli comprising:

expressing at least one T1R2 nucleic acid sequence and at least one T1R3 nucleic acid sequence in a recombinant host cell under conditions which result in a heteromeric taste receptor comprising at least one T1R2 and T1R3 polypeptide that responds to sweet taste stimuli, wherein said T1R2 polypeptide possesses at least 90% sequence identity to the human, mouse, or rat T1R2 of Figure 1; and wherein said T1R3 polypeptide possesses at least 90% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

237. (New) The cell of claim 236 wherein said T1R2 and T1R3 polypeptide are derived from different species.

238. (New) The method of claim 236 wherein said T1R2 and T1R3 polypeptide are of the same species.

239. (New) The cell of claim 236 wherein T1R2 polypeptide is the human, mouse, or rat T1R2 of Figure 1.

240. (New) The cell of claim 236 wherein said T1R2 polypeptide has at least 95% sequence identity to the human, mouse, or rat T1R2 of Figure 1.

241. (New) The cell of claim 236 wherein said T1R2 polypeptide has at least 96% sequence identity to the human, mouse, or rat T1R2 of Figure 1.

242. (New) The cell of claim 236 wherein said T1R2 polypeptide has at least 97% sequence identity to the human, mouse, or rat T1R2 of Figure 1.

243. (New) The cell of claim 236 wherein said T1R2 polypeptide has at least 98% sequence identity to the human, mouse, or rat T1R2 of Figure 1.

244. (New) The cell of claim 236 wherein said T1R2 polypeptide has at least 99% sequence identity to the human, mouse, or rat T1R2 of Figure 1.

245. (New) The cell of claim 236 wherein T1R3 polypeptide is the human, mouse, or rat T1R3 of Figure 1.

246. (New) The cell of claim 236 wherein said T1R3 polypeptide has at least 95% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

247. (New) The cell of claim 236 wherein said T1R3 polypeptide has at least 96% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

248. (New) The cell of claim 236 wherein said T1R3 polypeptide has at least 97% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

249. (New) The cell of claim 236 wherein said T1R3 polypeptide has at least 98% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

250. (New) The cell of claim 236 wherein said T1R3 polypeptide has at least 99% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

251. (New) The method of claim 236, wherein said T1R2 and said T1R3 nucleic acid sequences are each operably linked to a constitutive promoter.

252. (New) The method of claim 236, wherein, said T1R2 and said T1R3 nucleic acid sequences are each operably linked to an inducible promoter.

253. (New) The method of claim 236, wherein said T1R2 and T1R3 nucleic acid sequences are expressed in a prokaryotic cell.

254. (New) The method of claim 236, wherein said T1R2 and T1R3 nucleic acid sequences are expressed in a eukaryotic cell.

255. (New) The method of claim 254, wherein said cell is a mammalian, yeast, insect or amphibian cell.

256. (New) The method of claim 253, wherein said cell is a HEK-293 cell, COS cell, CHO cell, or Xenopus ooctye.

257. (New) The method of claim 256, wherein the cell is a HEK-293 cell.

258. (New) The method of claim 236, wherein said cell expresses a G protein.

259. (New) The method of claim 258, wherein said G protein is a promiscuous G protein.

260. (New) The method of claim 258, wherein said G protein is $G_{\alpha 15}$, $G_{\alpha 16}$ or gustducin.

261. (New) The method of claim 236, wherein said T1R2 and T1R3 polypeptides are expressed on the surface of said cell.

262. (New) The method of claim 236, wherein either of said T1R2 and T1R3 nucleic acid sequences are contained in a nucleic acid construct that comprises a nucleic acid sequence that encodes a detectable label.

263. (New) The method of claims 236, wherein said cell stably expresses said T1R2 and T1R3 nucleic acid sequences.

264. (New) The method of claim 236, wherein said cell transiently expresses said T1R2 and T1R3 nucleic acid sequences.